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Progress Notes on Experiments and Other Items of Interest

No. 11

November, 1935

These progress notes on experimental work and other items of interest to livestock men in the Territory are issued from time to time by the Animal Husbandry Division. You are invited to suggest other lines of research that you deem important and to submit inquiries to the University.

PINEAPPLE BRAN-MOLASSES MIXTURES FOR FATTENING SWINE

by L. A. Henke and G. W. H. Goo

Purpose

Pineapple bran, properly supplemented, was fed to swine at the University of Hawaii Farm during the period 1922-28 with generally economical and fairly satisfactory results.[#] Recent advances in the cost of imported feeds made it desirable to further investigate pineapple bran as a feed for fattening swine, particularly when combined with cane molasses to further reduce the cost of the ration.

The Rations Used

In this series of Experiments I, II and III the same rations were used each time except that in Experiment I the pineapple bran was used in the coarse condition, and finding that pigs have a habit of chewing

[#]Henke, L. A.--Pineapple Bran as a Feed for Livestock. Circular No. 2, Hawaii Agricultural Experiment Station--pp. 14-17 (1931)

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COMMITTEE ON INTELLIGENCE
HONORABLE ROBERT M. MCGOWAN

RE: TO PARAPHRASED FORM, NOT SUBSTANTIVE
TRUTHS BY PREDICATIVE
NOT LOGICAL
REFUTATION TO INDIVIDUALIZED VERBAL ACTION

RELEVANT TO POINT THREE: THE STATEMENT OF NOT ALL ACTIONS

ARE, NECESSARILY

TRUE.

-AS TO WHAT CALLS FOR PARAPHRASES OR PREDICATIVE STATEMENTS
NOT LOGICAL STATEMENTS, THE PREDICATIVE STATEMENT IS MORE
ACCURATE AND FASTER AND MORE PREDICTIVE THAN THE LOGICAL STATEMENT
IN THAT IT ACCURATELY REFLECTS THE STATEMENT MADE AND THAT STATEMENT IS
MORE PREDICTIVE.

THIS PREDICTIVE NOT LOGICAL STATEMENT IS ATTACHED

TO THE END OF PAGE THREE.

ANSWER

THE PREDICTIVE NOT LOGICAL STATEMENT ACCURATELY CALLS FOR
STATEMENT OF THE STATEMENT MADE, WHICH NOT LOGICAL STATEMENT IS MORE
ACCURATE AND FASTER AND MORE PREDICTIVE THAN THE LOGICAL STATEMENT
IN THAT IT ACCURATELY REFLECTS THE STATEMENT MADE AND THAT STATEMENT IS
MORE PREDICTIVE.

NOT RELEVANT

THE STATEMENT MADE ON PAGE THREE, I RECOMMEND, BE REMOVED FROM THE
STATEMENT OF THE STATEMENT MADE, AND I RECOMMEND, IN THE STATEMENT MADE, THAT
STATEMENT BE STRUCK OUT AND THAT NOT THIS STATEMENT, BUT ANOTHER STATEMENT
BE MADE WHICH ACCURATELY REFLECTS THE STATEMENT MADE, WHICH STATEMENT
IS MORE PREDICTIVE.

same but refusing to swallow some of the coarser particles in this form, the pineapple bran was first ground in Experiments II and III. Our regular Barley-Molasses ration, the value of which has been frequently demonstrated, was used as the control ration in each experiment. These rations, nutrients contained and cost at the time the experiments were conducted follow:

Barley-Molasses Ration (Control)

	Crude Protein lbs.	Digestible	Cost of Ration	
		Total nutrients lbs.	Per Ton	Cost
68 lbs. Barley	6.12	53.4	\$32.00	\$1.088
20 " Cane molasses	.20	11.9	10.00#	0.100
8 " Fish Meal	3.21	4.7	35.00	0.140
2 " Linseed oil cake meal	0.63	1.5	45.00	0.045
1 lb. Salt	--	--	8.00	0.004
1 " Bone meal	--	--	50.00	0.025
100 lbs. Mixture	10.16	71.5		\$1.402

Pineapple bran-Molasses Ration (Experimental)

50 lbs. Pineapple bran	1.20	26.0	14.00	0.350
20 " Cane molasses	0.20	11.9	10.00#	0.100
14 " Barley	1.26	11.1	32.00	0.224
12 " Fish meal	4.81	7.1	35.00	0.210
2 " Linseed oil cake meal	0.63	1.5	45.00	0.045
1 lb. Salt	--	--	8.00	0.004
1 " Bone meal	--	--	50.00	0.025
100 lbs. Mixture	8.10	57.6		\$.958

Nutritive Ratio:

Barley-Molasses Ration (control)	1:6.037
Pineapple bran-Molasses Ration (experimental)	1:6.111

Assumed cost--can often be purchased on plantations for \$5.00

Plan of Experiments

The general plan was the same in each experiment. The available pigs for each experiment were divided into two lots as equal as possible in all respects. In making the allotment such factors as age, weight, condition, sex and ancestry were considered and balanced as equally as possible in all cases.

Self-feeders were used in all cases and besides the concentrate feed provided in them, each pig was given one pound of green feed daily. This green feed was generally honchono and alfalfa in rare cases when same was available.

The pigs were housed in partially covered concrete pens and weighed at two-week intervals during the progress of the experiment. The initial and final weights are the averages of three weights taken on three consecutive days at the beginning and end of each test.

Ample water was supplied daily in clean troughs.

The allotment and gain of each pig for each experiment follows:

Experiment I--76 days--March 14-May 28, 1935, inclusive

No.	'From'	'Breed'	Born	'Sex	'Initial'	Final	'Gain
	'Sow'				'Weight'	'Weight'	'lbs.'
					'lbs.'	'lbs.'	
Lot I --Check Mixture--Barley Molasses							
1	114	TXB	12/8/34	M	75.7	213.7	138.0
6	"	"	"	F	70.6	193.7	123.1
8	"	"	"	F	63.0	163.3	100.3
Average					69.8	190.2	120.4
Lot II--Pineapple Bran-Molasses Mixture							
2	114	TXB	12/8/34	M	72.3	133.7	61.4
3	"	"	"	F	71.0	141.3	70.3
7	"	"	"	F	70.0	123.3	53.3
Average					71.1	132.8	61.7

and the other with which you have been so well acquainted and
which is now necessary for me to do in order to make the
present for you distribution stand in good repute. I hope you will
not consider it necessary to add any or all of the above to those you furnish, and
will let me know by return of mail what you think would be
best, and what additional or greater amount you would prefer.
I hope you will give me time to consider the above, and will
communicate to you when you can expect to receive my answer.

Yours very truly

John C. Frémont, General-in-Chief, U.S.A.

Washington, D. C., October 27, 1855.

John C. Frémont, General-in-Chief, U.S.A.

Experiment II#--35 days--April 18-May 22, 1935, inclusive

#

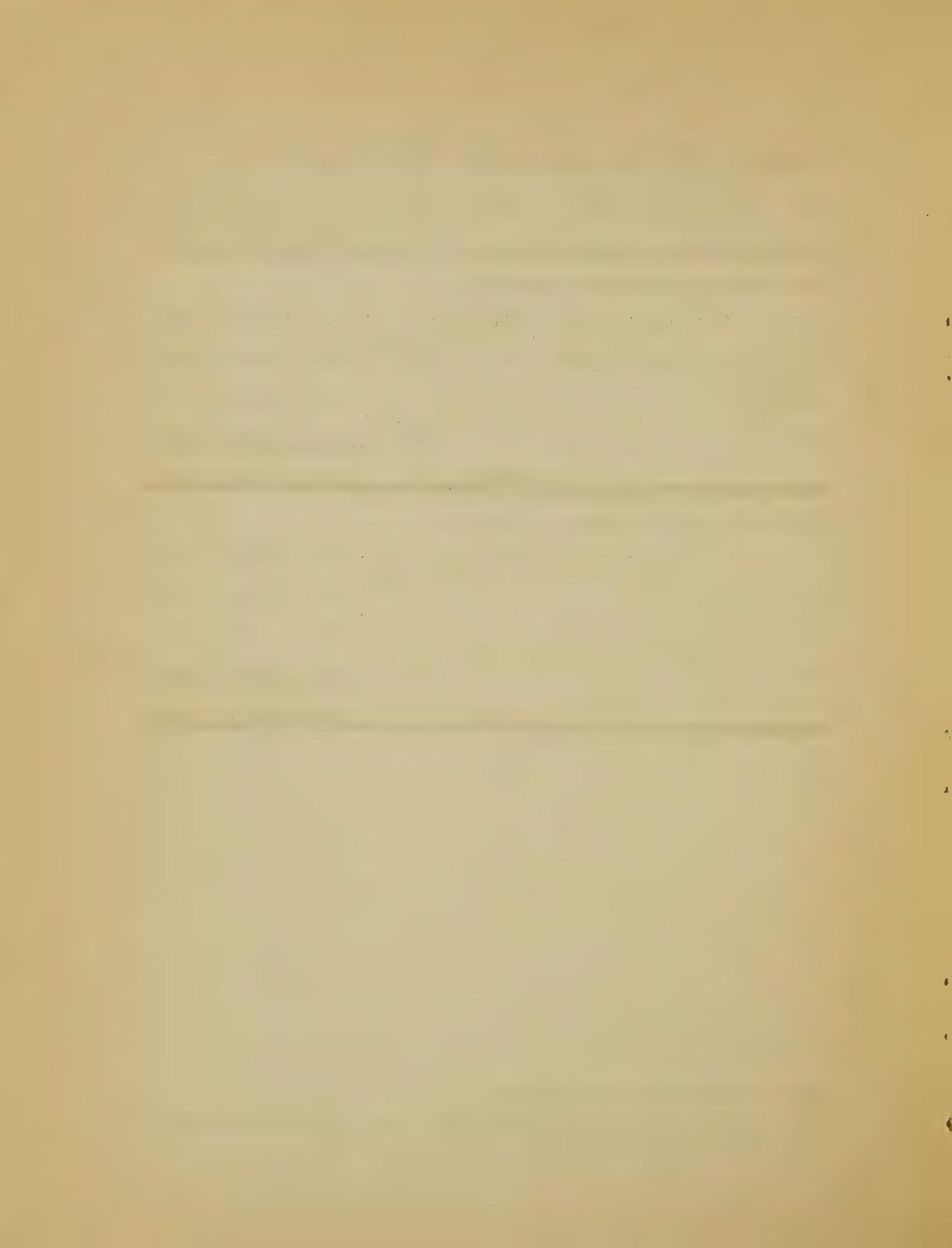
Two pigs in this experiment, No. 32 and No. 35, became ruptured so this test was not continued to market weight.

Experiment III#--35 days--June 6-July 10, 1935, inclusive

No.	Sex	Sow	Born	Breed	Former Feed	Initial Weight lbs.	Final Weight lbs.	Gain lbs.
Lot I--Check--Barley-Molasses Mixture								
2	M	114B	12/8/34	TXB	'Coarse 'Pine. Bran'	134.6	193.0	58.4
33	M	112B	1/3/35	"	'Control	129.0	192.3	63.3
36	F	"	"	"	'Fine 'Pine. Bran'	104.3	161.3	57.0
37	F	"	"	"	'Control	139.6	196.3	56.7
Average						126.9	185.7	58.8
Lot II--Pineapple Bran-Molasses Mixture								
3	F	114B	12/8/34	TXB	'Coarse 'Pine. Bran'	142.0	189.0	47.0
7	F	"	"	"	"	113.6	160.3	41.7
31	M	112B	1/3/35	"	'Control	110.0	144.3	34.3
44	F	"	"	"	"	138.3	174.6	36.3
Average						127.2	167.0	39.8

#

Most of these pigs had been used in Exp. I or II and the feed fed in the first experiment is shown.



The Condensed Results of These Three Experiments Follow:

	Experiment I	Experiment II	Experiment III	Av. of Exp. I, II&III
' Lot I	' Lot II	' Lot I	' Lot II	' Lots I
' Barley- 'Pineapple	'Barley- 'Pineapple	'Barley- 'Pineapple	'Barley- 'Pineapple	
' Molasses'bran-Molasses'Molasses'bran-Molasses'Molasses'bran-Molasses				
Number of experimental days	76	76	35	49
Number of pigs in each lot	3	3	3	4
Final average weight in pounds	190.2	132.8	116.2	130.4
Initial average weight in pounds	69.8	71.1	67.3	78.3
Average gain per pig in pounds	120.4	61.7	48.9	42.1
Average daily gain per pig in pounds	1.58	0.81	1.40	1.55
Total concentrate feed consumed, pounds	1453.	1027	582	909
Concentrate feed consumption per pig per day, pounds	6.37	4.50	5.54	5.03
Pounds concentrates required per pound gain	4.02	5.54	3.97	5.66
Total green roughage consumed, pounds	228	228	105	158
Total feed cost#	\$ 20.82	\$ 10.29	\$ 8.37	\$ 7.88
Feed cost per pound of gain	0.058	0.56	.057	.057

Green feed valued at \$4.00 per ton

General Observations and Summary

1. A fattening mixture for swine consisting of 82 percent locally produced feeds,--50 percent pineapple bran, 20 percent cane molasses, 12 percent fish meal (called pineapple bran-molasses) was compared with another mixture (called barley-molasses) which was only 28 percent locally produced,--20 percent cane molasses and 8 percent fish meal.
2. The ton costs of the pineapple bran-molasses and the barley-molasses rations were \$19.16 and \$28.04 respectively.
3. As an average of three experiments, each with two equal lots, pigs made an average daily gain of 0.89 and 1.55 pounds; consumed 5.03 and 6.56 pounds of concentrates per pig daily and required 5.66 and 4.21 pounds of the concentrate mixture to make a pound of gain for the pineapple bran-molasses and barley-molasses rations respectively.
4. From this it may be calculated that the pineapple bran-molasses ration was only 74.4 percent as effective in producing gains from the same quantity of feed, and was only 76.7 percent as palatable as measured by daily consumption as was the barley-molasses ration.
5. In two of the experiments the feed cost of a pound of gain based on prevailing prices was practically the same with both rations. In experiment III where pigs with an initial weight of 127 pounds were used the feed cost of a pound of gain was 6.6 cents and 5.7 cents for the barley-molasses and pineapple-bran-molasses rations respectively. This suggests that for best results the use of large quantities of pineapple bran in swine rations be deferred until the swine average around at least one hundred pounds each.
6. Both rations in these experiments contained 20 percent of cane molasses and its value in this amount has been demonstrated in previous experiments.

7. Because of its fiber content, swine do not seem to relish too much pineapple bran and it is possible that better results might have been secured had the pineapple bran been limited to about 25 percent instead of 50 percent as in these experiments. We observed the pigs chewing the pineapple bran, probably to get its sugar content, but refusing to swallow some of it. In experiment I we observed that about 8 percent of the pineapple bran fed was refused after the pigs had first chewed same. In experiments II and III the pineapple bran was more finely ground, making it difficult for the pigs to pick out the pineapple bran particles. However, results in the last two experiments were not notably different from experiment I where the coarse bran was fed except that more feed was consumed and better gains resulted but we infer this was due to the fact that pigs having an initial weight of 127 pounds were used in the last experiment.

8. Under the conditions of these experiments the pineapple bran-molasses mixture was worth only about 75 percent as much as the barley-molasses mixture for fattening swine and at prices prevailing at this time the former ration cost 68 percent as much as the latter, making the pineapple bran-molasses ration slightly more economical based on the feed cost of producing gains. However, slower gains require that the pigs be kept longer which increases the labor, housing and other costs of pork production, hence at these prices it would appear that the barley-molasses mixture was the better ration, particularly for pigs having an initial weight of around 70 pounds. The best practice would appear to be to start the pigs on the barley-molasses ration and then gradually change them to the pineapple bran-molasses ration when they reach the 125-pound weight for these experiments indicate that if pineapple bran is used for swine feeding the greatest economy results when same is fed to larger swine.

